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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/825,675

04/16/2004

Young-Chol Lee

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11/18/2005

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EXAMINER

BLACKMAN, ROCHELLE ANN J

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 11/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/825,675

Applicant(s)

LEE, YOUNG-CHOL

Examiner

Rochelle Blackman

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 April 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-14 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 16 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/16/04, 5/26/04, 5/24/05, & 7/6/05  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 7, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Sasaki (JP Patent No. 07-281293).

Regarding claim 1, Sasaki discloses an illumination unit (see Drawings 1-7) for a projection image display, the illumination unit comprising: a light source (see 1 of Drawing 1); an integrator (for example, see 2 of Drawings 1 and 3), which converts light emitted from the light source to have uniform optical intensity; and an aspect ratio conversion unit (see 5 of Drawings 1 and 3, and see mechanisms in Drawings 2 and 4-6, also see 22 of Drawings 9 and 10), which transmits light emitted from the integrator that does not correspond to an aspect ratio of image information back to the integrator, and converts and emits incident light to correspond to the aspect ratio of the image information (see operation of element 5 in paragraph [0014] and see operation of mechanisms in Drawings 4-6 in paragraph [0016]).

Regarding claim 7, Sasaki discloses a projection image display (see Drawings 1-7) comprising an illumination unit (see 1 of Drawing 1), an optical modulator (also see 1 of Drawing 1 – element 1 is a CRT – cathode ray tube) which modulates light emitted

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from the illumination unit according to image data, and a projection optical system (for example, see 18-20 of Drawing 8) in which enlarges and projects light emitted from the optical modulator, wherein the illumination unit comprises: a light source (see 1 of Drawing 1); an integrator (for example, see 2 of Drawings 1 and 3), which converts light emitted from the light source to have uniform optical intensity; and an aspect ratio conversion unit (see 5 of Drawings 1 and 3, and see mechanisms in Drawings 2 and 4-6, also see 22 of Drawings 9 and 10), which transmits light emitted from the integrator that does not correspond to an aspect ratio of image information back to the integrator, and converts and emits incident light to correspond to the aspect ratio of the image information.

Regarding claim 14, Sasaki discloses wherein the optical modulator comprises at least one of a transmission type optical modulator (see 1 of Drawing 1 – element 1 is a CRT – cathode ray tube).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-6 and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki (JP Patent No. 07-281293) in view of Dewald (U.S. Patent Application Publication No. 2001/008470).

Regarding claims 2 and 8, Sasaki discloses a slit member (for example, see 11, 12, 51, 52 of Drawings 1 and 4 and 23 of Drawings 9 and 10), which is installed on a side of the integrator on which light is emitted, adjusts an aspect ratio of a cross-section of the integrator; a driving unit (for example, see 6-8, 55 of Drawing 2; 14, 15 of Drawing 4; 6, 26 of Drawing 11), which drives the slit member; the slit member...installed to be movable in at least one direction of a widthwise direction and a lengthwise direction of the cross-section (see function of 5, 51, 52 in Drawing 1); and the slit member includes a pair of elements installed to be adjacent or spaced apart from each other in at least one direction of a widthwise direction and a lengthwise direction of the cross-section (also see function of 5, 51, 52 in Drawing 1).

However, Sasaki does not appear to disclose a "slit member...on which light is emitted according to the aspect ratio of the image information and reflects light, which does not correspond to the aspect ratio of the image information, back to the integrator"; a "recycling member, which is provided on a side of the integrator on which light is incident and is a reflective body which reflects light that has been reflected back to the integrator from the slit member, and in which a light window is formed so that light emitted from the light source is incident on the integrator"; wherein the slit member includes a "reflective mirror"; wherein the slit member includes a pair of "reflective mirrors"; wherein the integrator is a "transparent rod formed of a transparent material";

wherein the integrator is a "hollow-shaped light tunnel having internal reflective surfaces"; and wherein the optical modulator comprises at least one of a "reflection type optical modulator".

Dewald teaches providing a slit member (see 306 of FIG. 6 and paragraph [0036])...on which light is emitted according to the aspect ratio of the image information and reflects light, which does not correspond to the aspect ratio of the image information, back to the integrator; a recycling member (see 302 of FIG. 6 and paragraph [0036]), which is provided on a side of the integrator on which light is incident and is a reflective body which reflects light that has been reflected back to the integrator from the slit member, and in which a light window (see 304 of FIG. 6) is formed so that light emitted from the light source is incident on the integrator; wherein the slit member includes a reflective mirror (also see 306 in FIG. 6 and paragraph [0036]); wherein the slit member includes a pair of reflective mirrors (see left and right side portions or top and bottom portions of "slit member" 306 in FIG. 6 and see paragraph [0036]); wherein the integrator is a transparent rod (for example, see 106 of FIG. 1 and paragraph [0029]) formed of a transparent material; wherein the integrator is a hollow-shaped light tunnel (also see 106 of FIG. 1 and paragraph [0029]) having internal reflective surfaces; and wherein the optical modulator comprises at least one of a reflection type optical modulator (see 110 of FIG. 1).

It would have been obvious to one ordinary skill in the art at the time the invention was made to provide the "illumination unit" or "projection image display" of the Dewald reference with a "slit member", a "recycling member", an integrator that is a

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"transparent rod or hollow-shaped light tunnel" and "reflection type optical modulator", as taught by Dewald for the purpose of providing a display system that provides an efficient illumination system by recycling light and forms a bright pixel on an image plane (see paragraphs [0012], [0013], and [0032]).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



RB

**William Perkey**  
**Primary Examiner**